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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/595,071	01/30/2006	Szabolcs Malomsoky	P18073-US1	2150

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EXAMINER	
TAYLOR, BARRY W	

ART UNIT	PAPER NUMBER
2617	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/595,071	MALOMSOKY ET AL.	
	Examiner	Art Unit	
	Barry W. Taylor	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 January 2006*.

2a)☐ This action is FINAL. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3 and 12-16* is/are rejected.

7)☒ Claim(s) *4-11* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 January 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. The applicant claims priority to PCT/IB03/02510 however a reference to the prior application must be inserted as the first sentence(s) of the specification of this application or in an application data sheet (37 CFR 1.76). Applicant is still required to submit the reference in compliance with 37 CFR 1.78(a) by filing an amendment to the first sentence(s) of the specification or an ADS. See MPEP § 201.11.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 1-3 and 12-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicants Admitted Prior Art (hereinafter AAPA) in view of McDonagh et al (7,328,262 hereinafter McDonagh).

Regarding claim 1. AAPA teaches a method of measuring and analyzing packet-switched traffic in a Universal Mobile Telecommunications System, UMTS, network having a mobile station linked to a base station through a radio channel, the base station being linked to a radio access network, and the radio access network being linked to a support node in a packet core network, wherein cell-level location information of the mobile station is obtained in a node in the radio access network (see AAPA figures 1 and 2, paragraphs 0034-0037, see Description of Related Art --- paragraphs 0003-0013), said method comprising:

adding the obtained cell-level location information to user-plane packet headers;

transmitting the user-plane packets carrying the cell-level location information towards the packet core network;

measuring the cell-level location information, user data traffic, and packet data protocol, PDP, context information (see paragraphs 0008 wherein cell-level information is measured at the radio access network, see paragraph 0013 wherein cell-level information is measured at the so-called Iub interfaces, see figures 1 and 2 and paragraphs 0034-0037 wherein cell-level location information is measured at measuring points 15a and at the Gi interface where it is then aggregated) at the packet core network level; and

determining end-to-end quality-of-service, QoS, metrics for the mobile station by analyzing (see paragraph 0036 wherein cell-level information is obtained and paragraph 0035 wherein Gi interface aggregates the traffic to deliver network wide performance statistics, see paragraph 0008 wherein end-to-end quality measurements and traffic load measurements to cells is captured) the cell-level location information, user data traffic, and PDP context information measured at the packet core network level.

AAPA does not teach measuring cell-level location information at the packet core network level (i.e. the Iu interface as shown in figure 4 or at the Gn interface as shown in figure 3).

McDonagh teaches monitoring at the Iu and Gn interfaces in a non-intrusive manner (abstract) to provide real time subscriber-centered QoS metrics (abstract, col. 2 lines 3-15, lines 20-24, lines 50-58). McDonagh shows monitoring at the Iu interface (see items 156 and 161 figure 2, col. 4 lines 24-60, col. 5 lines 4-47, col. 7 lines 52-67), and at the Gn interface (see items 157 and 162 figure 2, col. 4 lines 24-60, col. 5 lines 4-47, col. 8 lines 1-15). McDonagh teaches the Iu probe provides information relating to cell-id, PDP context (see col. 5 lines 4-24 wherein the RAN adds the cell-id information) and the Gn probes provides metrics on roaming and mobility (col. 8 lines 1-25). McDonagh list several benefits of using Iu and Gn probes (see col. 10 line 64 - col. 12 line 20 which include allowing an operator to provide proactive customer care by detecting poor or deteriorating network before the users themselves realize it, allows operators the ability to check that a roaming user gets the same QoS in each

network belonging to the operator, allows operators to trace QoS as the user roams between cells, and measure statistics relating to GTP tunneling).

It would have been obvious for any one of ordinary skill in the art at the time of invention to modify AAPA to monitor at the Iu and Gn interfaces as taught by McDonagh in order to allow network operators the ability to obtain real-time subscriber-centered QoS metrics at the network level as disclosed by McDonagh.

Regarding claim 14. AAPA teaches a Universal Mobile Telecommunication System: UMTS, network for exchanging data packets, said telecommunication network including an access network portion for connecting a plurality of mobile stations to the telecommunication network, a packet core network portion for connecting the access network portion to external networks, and at least one network monitoring device, wherein the access network portion includes nodes for transmitting data packets from the mobile stations towards the packet core network portion ((see AAPA figures 1 and 2, paragraphs 0034-0037, see Description of Related Art --- paragraphs 0003-0013)), said UMTS network comprising:

means within at least one of said nodes in the access network portion for adding cell-level location information to the data packets that are transmitted towards the packet core network portion; and

an aggregate measurement point in the telecommunication network where the monitoring device measures cell-level location information aggregated from a plurality of nodes (see paragraphs 0008 wherein cell-level information is measured at the radio

access network, see paragraph 0013 wherein cell-level information is measured at the so-called lub interfaces, see figures 1 and 2 and paragraphs 0034-0037 wherein cell-level location information is measured at measuring points 15a and at the Gi interface where it is then aggregated), wherein the monitoring device determines end-to-end quality-of-service, QoS, metrics for the mobile station (see paragraph 0036 wherein cell-level information is obtained and paragraph 0035 wherein Gi interface aggregates the traffic to deliver network wide performance statistics, see paragraph 0008 wherein end-to-end quality measurements and traffic load measurements to cells is captured) by analyzing the cell-level location information and PDP context information for the plurality of nodes.

AAPA does not teach measuring cell-level location information at the packet core network level (i.e. the lu interface as shown in figure 4 or at the Gn interface as shown in figure 3).

McDonagh teaches monitoring at the lu and Gn interfaces in a non-intrusive manner (abstract) to provide real time subscriber-centered QoS metrics (abstract, col. 2 lines 3-15, lines 20-24, lines 50-58). McDonagh shows monitoring at the lu interface (see items 156 and 161 figure 2, col. 4 lines 24-60, col. 5 lines 4-47, col. 7 lines 52-67), and at the Gn interface (see items 157 and 162 figure 2, col. 4 lines 24-60, col. 5 lines 4-47, col. 8 lines 1-15). McDonagh teaches the lu probe provides information relating to cell-id, PDP context (see col. 5 lines 4-24 wherein the RAN adds the cell-id information) and the Gn probes provides metrics on roaming and mobility (col. 8 lines 1-25). McDonagh list several benefits of using lu and Gn probes (see col. 10 line

64 - col. 12 line 20 which include allowing an operator to provide proactive customer care by detecting poor or deteriorating network before the users themselves realize it, allows operators the ability to check that a roaming user gets the same QoS in each network belonging to the operator, allows operators to trace QoS as the user roams between cells, and measure statistics relating to GTP tunneling).

It would have been obvious for any one of ordinary skill in the art at the time of invention to modify AAPA to monitor at the Iu and Gn interfaces as taught by McDonagh in order to allow network operators the ability to obtain real-time subscriber-centered QoS metrics at the network level as disclosed by McDonagh.

Regarding claim 15. AAPA teaches a monitoring device for measuring and analyzing packet-switched traffic in a Universal Mobile Telecommunication System, UMTS, radio telecommunication network having a plurality of mobile stations linked to a plurality of base stations through a plurality of radio channels, each the base station being linked to a radio access network, and a plurality of radio access networks being linked to a support node in a packet core network (see AAPA figures 1 and 2, paragraphs 0034-0037, see Description of Related Art --- paragraphs 0003-0013), said monitoring device characterized by:

at least one measurement point for measuring cell-level location information of the mobile stations at a level in the network where the cell-level location information of a plurality of mobile stations is aggregated; and

computing means for determining end-to-end quality-of-service, QoS, metrics for the mobile station (see paragraphs 0008 wherein cell-level information is measured at the radio access network, (see paragraph 0013 wherein cell-level information is measured at the so-called Iub interfaces, see figures 1 and 2 and paragraphs 0034-0037 wherein cell-level location information is measured at measuring points 15a and at the Gi interface where it is then aggregated) by analyzing the measured aggregated cell-level location information.

AAPA does not teach measuring cell-level location information at a level in the network (i.e. the Iu interface as shown in figure 4 or at the Gn interface as shown in figure 3) where the cell-level location information of a plurality of mobile stations is aggregated.

McDonagh teaches monitoring at the Iu and Gn interfaces in a non-intrusive manner (abstract) to provide real time subscriber-centered QoS metrics (abstract, col. 2 lines 3-15, lines 20-24, lines 50-58). McDonagh shows monitoring at the Iu interface (see items 156 and 161 figure 2, col. 4 lines 24-60, col. 5 lines 4-47, col. 7 lines 52-67), and at the Gn interface (see items 157 and 162 figure 2, col. 4 lines 24-60, col. 5 lines 4-47, col. 8 lines 1-15). McDonagh teaches the Iu probe provides information relating to cell-id, PDP context (see col. 5 lines 4-24 wherein the RAN adds the cell-id information) and the Gn probes provides metrics on roaming and mobility (col. 8 lines 1-25). McDonagh list several benefits of using Iu and Gn probes (see col. 10 line 64 - col. 12 line 20 which include allowing an operator to provide proactive customer care by detecting poor or deteriorating network before the users themselves realize it,

allows operators the ability to check that a roaming user gets the same QoS in each network belonging to the operator, allows operators to trace QoS as the user roams between cells, and measure statistics relating to GTP tunneling).

It would have been obvious for any one of ordinary skill in the art at the time of invention to modify AAPA to monitor at the Iu and Gn interfaces as taught by McDonagh in order to allow network operators the ability to obtain real-time subscriber-centered QoS metrics at the network level as disclosed by McDonagh.

Regarding claim 2. McDonagh teaches wherein the step of measuring the cell-level location information includes measuring cell-level location information, user data traffic, and PDP context information in a plurality of radio access networks (see col. 5 lines 4-24 wherein Iu probe provides information relating to IMSI, cell-id, timestamp, procedure duration, PDP context, procedure duration, result, origin, data address, QoS negotiated, QoS requested, bytes sent and received).

Regarding claim 3. McDonagh teaches wherein the step of measuring the cell-level location information and the PDP context information at the packet core network level includes measuring the cell-level location information and the PDP context information at an aggregation level at which user-plane traffic from the entire network is combined (see col. 4 lines 42-60 wherein subscriber data is aggregated together to provide key performance metrics relating to latencies, delays, success rates, and throughput values).

Regarding claim 12. AAPA teaches wherein the UMTS network includes a plurality of mobile stations linked to a plurality of base stations through a plurality of radio channels, each of the base stations being linked to a UMTS Terrestrial Radio Access Network, UTRAN, and a plurality of UTRANs being linked via a plurality of Iu interface links to a Serving General Packet Radio Service Support Node, SGSN, in a packet core network (see PRIOR ART figures 1 and 2).

AAPA does not show wherein the measuring step includes measuring the cell-level location information for the plurality of mobile stations and the PDP context information on the plurality of Iu interface links between the UTRANs and the SGSN.

McDonagh teaches monitoring at the Iu and Gn interfaces in a non-intrusive manner (abstract) to provide real time subscriber-centered QoS metrics (abstract, col. 2 lines 3-15, lines 20-24, lines 50-58). McDonagh shows monitoring at the Iu interface (see items 156 and 161 figure 2, col. 4 lines 24-60, col. 5 lines 4-47, col. 7 lines 52-67), and at the Gn interface (see items 157 and 162 figure 2, col. 4 lines 24-60, col. 5 lines 4-47, col. 8 lines 1-15). McDonagh teaches the Iu probe provides information relating to cell-id, PDP context (see col. 5 lines 4-24 wherein the RAN adds the cell-id information) and the Gn probes provides metrics on roaming and mobility (col. 8 lines 1-25). McDonagh list several benefits of using Iu and Gn probes (see col. 10 line 64 - col. 12 line 20 which include allowing an operator to provide proactive customer care by detecting poor or deteriorating network before the users themselves realize it, allows operators the ability to check that a roaming user gets the same QoS in each

network belonging to the operator, allows operators to trace QoS as the user roams between cells, and measure statistics relating to GTP tunneling).

It would have been obvious for any one of ordinary skill in the art at the time of invention to modify AAPA to monitor at the Iu and Gn interfaces as taught by McDonagh in order to allow network operators the ability to obtain real-time subscriber-centered QoS metrics at the network level as disclosed by McDonagh.

Regarding claim 13. AAPA does not show wherein the packet core network is linked to a Gateway GPRS Support Node, GGSN, through a Gn interface link, and the method includes the steps of: passing the cell-level location information for the mobile stations and PDP context information from the plurality of UTRANs to the GGSN via the Iu interface links, the SGSN, the packet core network, and the Gn interface link; measuring on the Gn interface link, user-plane traffic for the entire network, said user-plane traffic including the cell-level location information for the mobile stations and the PDP context information combined from the plurality of UTRANs; and determining the end-to-end QoS metrics for the mobile station by analyzing the cell-level location information and PDP context information for the entire network.

McDonagh teaches monitoring at the Iu and Gn interfaces in a non-intrusive manner (abstract) to provide real time subscriber-centered QoS metrics (abstract, col. 2 lines 3-15, lines 20-24, lines 50-58). McDonagh shows monitoring at the Iu interface (see items 156 and 161 figure 2, col. 4 lines 24-60, col. 5 lines 4-47, col. 7 lines 52-67), and at the Gn interface (see items 157 and 162 figure 2, col. 4 lines 24-60, col. 5 lines 4-47, col. 8 lines 1-15). McDonagh teaches the Iu probe provides information

relating to cell-id, PDP context (see col. 5 lines 4-24 wherein the RAN adds the cell-id information) and the Gn probes provides metrics on roaming and mobility (col. 8 lines 1-25). McDonagh list several benefits of using Iu and Gn probes (see col. 10 line 64 - col. 12 line 20 which include allowing an operator to provide proactive customer care by detecting poor or deteriorating network before the users themselves realize it, allows operators the ability to check that a roaming user gets the same QoS in each network belonging to the operator, allows operators to trace QoS as the user roams between cells, and measure statistics relating to GTP tunneling).

It would have been obvious for any one of ordinary skill in the art at the time of invention to modify AAPA to monitor at the Iu and Gn interfaces as taught by McDonagh in order to allow network operators the ability to obtain real-time subscriber-centered QoS metrics at the network level as disclosed by McDonagh.

Regarding claim 16. McDonagh teaches means for obtaining packet data protocol, PDP, context information for the packet switched traffic (see col. 5 lines 4-24 wherein Iu probe provides information relating to IMSI, cell-id, timestamp, procedure duration, PDP context, procedure duration, result, origin, data address, QoS negotiated, QoS requested, bytes sent and received), wherein the computing means includes means for analyzing the PDP context information together with the measured cell-level location information for the entire network (see col. 4 lines 42-60 wherein subscriber data is aggregated together to provide key performance metrics relating to latencies, delays, success rates, and throughput values).

Allowable Subject Matter

3. Claims 4-11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

---(2004/0248583) Satt et al is considered pertinent as to monitoring at the Iu interface (figure 3) providing for end-to-end resource management (paragraph 0063). Satt et al discloses monitoring at the Iu interface allows for tracking the distribution of mobile stations among the cells (paragraph 0071). Satt et al discloses that monitoring or probing may be done on other interfaces (paragraph 0068). Sat et al teaches the entire network is updated by broadcasting a message to other policy processors (paragraph 0084). However, Satt et al does not explicitly show monitoring or probing at the Gn interface.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barry W. Taylor, telephone number (571) 272-7509, who is available Monday-Thursday, 6:30am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dwayne Bost, can be reached at (571) 272-7023. The central facsimile phone number for this group is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group 2600 receptionist whose telephone number is (571) 272-2600, the 2600 Customer Service telephone number is (571) 272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you

have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Centralized Delivery Policy: For patent related correspondence, hand carry deliveries must be made to the Customer Service Window (now located at the Randolph Building, 401 Dulany Street, Alexandria, VA 22314), and facsimile transmissions must be sent to the central fax number (571-273-8300).

/Barry W Taylor/
Primary Examiner, Art Unit 2617